

CLAIMS

WHAT IS CLAIMED IS:

1. A method for controlling signaling and channel assignment in a decentralized trunked radio system to operationally mimic a centralized trunked radio system, the method comprising:

a) monitoring a parameter indicative of elapsed time of channel activity presently being carried in a respective one of a plurality of radio frequencies assigned to the radio system;

b) upon the parameter indicative of elapsed time of channel activity reaching a respective target value, determining whether there is another radio frequency in the plurality of radio frequencies assigned to the radio system available for carrying the channel activity presently being carried by the one radio frequency;

c) if the determining action indicates the presence of an available radio frequency for carrying the channel activity, shifting the channel activity from the one radio frequency to the available radio frequency; and

d) iteratively performing actions a) through c) for each of the plurality of radio frequencies assigned to the radio system so that radio channel activity, upon reaching the target value, is sequentially shifted to any radio frequency determined to be available, and thus ensuring that each radio frequency assigned to the radio system is generally free in a time interval commensurate with the respective target value.

2. The method of claim 1 wherein the channel activity is selected from the group consisting of control and working channel activity.

3. The method of claim 1 wherein determining whether there is another radio frequency available for carrying the channel activity presently being carried by the one radio frequency comprises monitoring a parameter indicative of time-elapsed in an activity-free mode in said another frequency.

10073654-021102

4. The method of claim 3 wherein when the time elapsed in the activity-free mode reaches a respective target value, said another radio frequency is determined to be available for carrying the channel activity presently being carried by the one radio frequency.

5 5. The method of claim 4 wherein in the event no radio frequency is determined to be available, continue the respective radio channel activity in the one radio frequency until at least one radio frequency is determined to be available.

10 6. The method of claim 1 further comprising prior to performing the action for determining whether there is another radio frequency available for carrying the channel activity presently being carried by the one radio frequency, monitoring whether a radio frequency assignment is in progress.

15 7. The method of claim 6 wherein in the event a radio frequency assignment is in progress, continue the respective radio channel activity in the one radio frequency until the radio frequency assignment is concluded and at least one radio frequency is determined to be available.

8. A computer-readable medium including instructions causing a computer to control signaling and channel assignment in a decentralized trunked radio system to operationally mimic a centralized trunked radio system by:

a) monitoring a parameter indicative of elapsed time of channel activity presently being carried in a respective one of a plurality of radio frequencies assigned to the radio system;

b) upon the parameter indicative of elapsed time of channel activity reaching a respective target value, determining whether there is another radio frequency in the plurality of radio frequencies assigned to the radio system available for carrying the channel activity presently being carried by the one radio frequency;

c) if the determining action indicates the presence of an available radio frequency for carrying the channel activity, shifting the channel activity from the one radio frequency to the available radio frequency;

d) iteratively performing actions a) through c) for each of the plurality of radio frequencies assigned to the radio system so that radio channel activity, upon reaching the target value, is sequentially shifted to any radio frequency determined to be available, and thus ensuring that each radio frequency assigned to the radio system is generally free in a time interval commensurate with the respective target value.

9. The computer medium of claim 8 wherein the channel activity is selected from the group consisting of control and working channel activity.

10. The computer medium of claim 8 wherein determining whether there is another radio frequency available for carrying the channel activity presently being carried by the one radio frequency comprises monitoring a parameter indicative of time-elapsed in an activity-free mode in said another frequency.

11. The computer medium of claim 10 wherein when the time elapsed in the activity-free mode reaches a respective target value, said another radio frequency is determined to be available for carrying the channel activity presently being carried by the one radio frequency.

12. The computer medium of claim 11 wherein in the event no radio frequency is determined to be available, continue the respective radio channel activity in the one radio frequency until at least one radio frequency is determined to be available.

5 13. The computer medium of claim 8 further comprising prior to performing the action for determining whether there is another radio frequency available for carrying the channel activity presently being carried by the one radio frequency, monitoring whether a radio frequency assignment is in progress.

10 14. The computer medium of claim 13 wherein in the event a radio frequency assignment is in progress, continue the respective radio channel activity in the one radio frequency until the radio frequency assignment is concluded and at least one radio frequency is determined to be available.